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CLINICAL ADVISORY

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Recognizing Cutaneous Anthrax

Recent experience in New York City and other parts of the country has highlighted certain aspects of the clinical recognition of cutaneous anthrax.

Cutaneous anthrax begins as a small papule, progresses to a vesicle in 1-2 days followed by a necrotic ulcer evolving over the ensuing 3-7 days after onset, with a blackened eschar (scab-like, dried secretions covering the crater of the ulcer) usually forming. Incubation period ranges from 1-12 days. There may be a few nearby satellite vesicular lesions as well. Lesions are usually painless, but patients may have fever, malaise, headache and regional lymphadenopathy. The case fatality rate for cutaneous anthrax is 20% without, and less than 1% with, antibiotic treatment. (See www.state.ma.us/dph/topics/bioterrorism/BT.htm for additional information.)

Four cases of cutaneous anthrax diagnosed in New York City had preliminary diagnoses of insect/spider bite because of the presence of ulcerative/necrotic lesions. It is important to consider anthrax in the differential diagnosis of ulcerative/necrotic skin lesions, especially with surrounding edema, vesicles and/or black eschar.

Suspect cutaneous anthrax in any person with:

- an suspicious ulcerative lesion with surrounding erythema, edema, vesicles and/or
- a blackened eschar, or
- a less suspicious lesion in person with known or possible exposure to a threatening letter with powder, or
- laboratory evidence suggestive of possible *Bacillus anthracis* infection (Gram stain from lesion/sterile fluid/tissue with Gram-positive bacilli or encapsulated, non-motile, non-hemolytic bacilli on culture of body fluid or site).

Report all suspected cutaneous, inhalational, septicemic, meningeal and gastrointestinal anthrax cases immediately to the local health department (in Boston, Boston Public Health Commission at 617-534-5611) or to the Massachusetts Department of Public Health (617-983-6800).

Laboratory approach to diagnosis of cutaneous anthrax includes:

- culture and Gram stain of exudates from lesion,
- culture of sterile punch biopsy of lesion, or
- in febrile and/or hospitalized patients, blood cultures, and
- in highly suspicious cases, consult the State Laboratory Institute (617-983-6600) about obtaining and submitting two skin biopsies for PCR and immunohistochemical staining at CDC.

Cutaneous anthrax is responsive to two weeks of oral antibiotic therapy (currently recommended: ciprofloxacin, 500mg, twice daily; doxycycline, 100mg, twice daily; or amoxicillin, 500mg, three times per day). In the context of bioterrorism, since an individual presenting with cutaneous anthrax may have also had aerosol exposure, a full 60 days of prophylactic treatment with the same agent is currently recommended to prevent inhalational anthrax. Penicillins have been the drugs of choice for the treatment of cutaneous anthrax. However, recent isolates of B. *anthracis*, while testing susceptible to penicillin in

vitro, have had indications that they may produce enzymes that might cause them to work less well as therapeutic agents. Therefore, it is recommended that people now presenting with anthrax not be treated with penicillins alone. See specific CDC recommendations regarding pregnant women and children at http://www.bt.cdc.gov.

Nasal swab cultures are not useful in the diagnosis of anthrax. In the absence of a credible threat of anthrax exposure, do not obtain nasal swab cultures or prescribe prophylactic antibiotics.

For more information, see http://www.state.ma.us/dph/topics/bioterrorism/BT.htm and http://jama.ama-assn.org/issues/v281n18/ffull/jst80027.html. The MDPH information line on emergency preparedness and response is **1-866-627-7968**.

Some information adapted from materials provided by the New York City Department of Health.